Amendments to the Specification:

Please make the following change to the first paragraph of page 3:

As described in USPN 6,629,841, certain dental impression trays formed of metal, such as stainless steel, have a pair of spaced-apart vertical walls joined by a semi-rigid mat or mesh material disposed horizontally between the opposing vertical walls. Extending outwardly in structural relation to at least a portion of the surface facing of one of the vertical walls, a handle member may be provided to facilitate a means for gripping the impression tray for purposes of manual manipulation. In addition, an open trough or channel is generally formed between the opposing vertical walls, wherein the horizontally disposed mesh material provides porous surface flooring for the trough. In operation, the mesh material provides a means for permitting excess flow of impression material to become displaced and extruded ~~there through~~ therethrough. Dental impression trays of the prior art may further include openings formed in the vertical walls of the trough or channel which generally function as an anchoring surface for the impression, thus allowing the excess flow of impression material to become attached thereto.

Please make the following change to the first two paragraphs of page 7:

FIG. 1 is a perspective view of a dental impression tray utilized to take dental impressions. FIG. 1A is an enlarged view of a portion of the tray of FIG. 1. The dental tray is designated by reference number 10. Fig. 2 shows a top view of the tray 10, while Fig. 3 shows a front view of the tray 10 and Fig. 4 shows a side view of the tray 10.

The dental impression tray 10 is typically fabricated from either a thermoplastic resin or metal and includes a tray base 12, an inner tray wall 14 and an outer tray wall 16, each of which may have the same thickness, different thicknesses, or varying wall thicknesses. The inner wall 14 defines a tray recess for accommodating an individual's tongue when taking an impression, while the outer and inner tray walls 14-16 define a receiving region to receive an impression material. The tray 10 includes a tab or a handle 18 with an opening 42 to facilitate handling by a

user such as a dental professional. The base 12 and the handle 18 include one or more openings 40 which allow impression materials to flow from the receiving region as the tray is pressed against a patient's teeth. Additionally, one or more openings 50 can be formed on the walls 14-16 to allow impression materials to flow from the receiving region as well. The openings 40 and 50 may take a variety of shapes. As illustrated, the openings 40 are square, but may be rectangular or oval or rectilinear in shape. Also, the openings 50 can be triangular, semi-spherical, or semi-oval in shape.

Please make the following change to the second paragraph of page 8, ending at page 9:

Fig. 5 is a perspective view of a second embodiment dental impression tray 110 utilized to take dental impressions. In place of an inner wall, the tray 110 has a curved surface or portion 160 connecting the interior portion of a base 112. Similar to the dental impression tray 10, the tray 110 includes a tray base where the arcuate portion 160 interconnects the inner edges of the tray base and an outer tray wall. The parts of the tray 110 may have the same thickness, different thicknesses, or varying thicknesses. The tray 110 includes a tab or a handle 118 with opening 142 to facilitate handling by a user such as a dental professional. The base 112 includes one or more openings 140 which allow impression materials to flow from the receiving region as the tray is pressed against a patient's teeth. Additionally, one or more openings 150 can be formed on the walls 114-116 to allow impression materials to flow from the receiving region as well. The openings 140 and 150 may take a variety of shapes. As illustrated, the openings 140 are square, but may be rectangular or oval or rectilinear in shape. Also, the openings 150 can be triangular, semi-spherical, or semi-oval in shape.

Please make the following change to the second paragraph of page 9:

Fig. 6 shows a perspective view of another embodiment, while Fig. 7 shows a top view of the embodiment of Fig. 6. As shown therein, an exemplary dental impression tray 980 with a plurality of detachable portions 982, 984, 986 and 988, among others. In this embodiment, a user can remove one or more of the detachable portions 982-988 as desired to better conform the dental impression tray 980 to a patient's anatomy. In the embodiment of Fig. 6, the detachable portions 982-988 are removed in sequence that is the end portion must be removed before the next portion can be removed. To illustrate, the portion 982 should be removed ~~so expose~~ to expose the portion 986 for removal. Similarly, the portion 984 should be removed to allow the user access to the portion 988.

Please make the following change to the first paragraph of page 11, ending at page 12:

The impression tray ~~10 or 110~~ 10, 110, 980 or 990 and impression material are then introduced into a patient's mouth. An impression is made by the dentist positioning the impression tray and impression material over the patient's teeth and applying pressure so that the impression material disperses around the teeth and dental arch while the dental impression material is curing. To obtain an accurate impression, the impression material must be pushed against the teeth and gums, so that there are no gaps between the teeth and gums and the impression material. To capture the patient's upper arch, the tray is inserted with the base 12 facing down. To capture the patient's lower arch, the tray is inverted so that the tray base 12 is disposed upwardly. It will be appreciated that the tray interior accommodates a teeth impression material such as wax. After the impression has been made by virtue of the dentist pressing the patient's teeth into the impression material, the tray and impression material are removed from

the mouth after the impression material have cured and will not flow or deform. Excess impression material may be trimmed from the lingual recess of the dental impression tray.

Please make the following changes to the last paragraph of page 13, ending at page 14:

The tray and the impression material are eventually provided to a scanner to obtain 3-D dental information for the patient. Fig. 10 shows one embodiment of the scanner, which in this embodiment is an X-ray scanner. The scanner 800 has a ~~rotating~~ rotatable table 804 including a table top that has sufficient space for one or two impressions 810 to rest on it. The impression 810 can be irradiated by a flat fan-shaped X-ray beam 803 emitted by an X-ray source 802. The radiation is swept by the impression 810 and passes through a scintillator 812. Radiation transmitted by the scintillator 812 is measured by an X-ray detector 820. The detector 820 performs an analog to digital conversion and provides this information to a computer 822. The computer 822 captures on cross sectional scan and instructs the ~~rotating~~ rotatable table 804 to rotate to its next position and another scan is performed until the entire impression 810 is scanned. The X-ray source 802, the scintillator 812, the detector 820 and the rotatable table 804 thus obtains an image of a cross-section of (a part of) the impression 810 by computer tomography (CT). The CT system scans impressions of patients' teeth and eliminates the need to create a plaster model for each jaw. Software on the computer 822 automatically extracts a positive model out of the scan data. The upper and lower jaw will then be put together using the information from the scan data of a wax bite. In one embodiment, the scanner 800 utilizes a technique called "cone beam reconstruction."

Please make the following changes to paragraphs 2-4 of page 14, ending at page 15:

2. A bite of the patient will be taken. A suitable material for capturing the bite is PVS material in order to capture detailed tooth geometry. Wax bites may also be used

but results can be ~~worse based on definition on~~ less accurate based on definition of the bite (904).

3. The ~~upper, lower~~ upper and lower jaws and the bite will be scanned together in the CT machine (906).

4. Once scanned, the upper and lower jaw ~~lower~~ impression scanned data is digitally reversed to make a positive model. ~~positive.~~ This is done by identifying the inner most surface of the impression material and extracting it from the rest of the data using a largest connected component algorithm (908).

Please make the following change to the last paragraph of page 15, ending at page 16:

In one aspect, a method creates a digital model of a patient's teeth by creating a radiographic impression of the patient's teeth; scanning the impression using an X-ray source; and generating the digital model with scanned data. Implementations of the above aspect may include one or more of the following. The radiation source may be passed through a scintillator. The output of the scintillator is then digitized. The impression of the teeth can be taken in a dental tray. A bite impression of the patient can also be taken. The bite impression is taken using a PVS material or a wax bite. The upper teeth impression, a lower teeth impression and a bite impression can be scanned together. The data for the upper and lower impression scan data to make positive data can be digitally reversed. The digital reversing identifies inner surfaces of an impression material and extracts ~~extracting~~ the inner surfaces using a largest connected component algorithm. The data can be aligned into a bite position using the bite material scanned. The digitized teeth data can be digitally detailed. A final bite can be determined. The digital model can be virtually articulated. A computer representation of a masticatory system of the patient can be generated and the computer can determine an occlusion from the computer representation of the masticatory system. The system can register a model of the upper and lower teeth with a model of the masticatory system; simulate the motion of the jaws to generate

contact data between the upper and lower teeth; and place teeth in a final position based on the contact data. The system can apply kinematics to the model of the teeth. A constrained motion can be applied to the model of the tooth. The position of the tooth can be determined according to a measure of undesirability. The measure of undesirability is a function of one or more of Peer Assessment Rating (PAR) metrics, distance-based metrics and shape-based metrics. A library of motions can be applied to the digital model of the teeth. The library of motions includes protrusive motion, lateral motion, and tooth-guided motion. Physical forces can be applied to the teeth model.